

ENERGY EFFICIENCY AND CONSERVATION IN STATE BUILDINGS

(from January 2009 Report, pp. 66-71)

Government buildings are a significant source of energy consumption. Focus on energy efficiency in state government facilities has always been a concern, but has become more acute as the costs of energy have increased. Attention to the practice of energy efficiency by state governments is one of the eight areas where states are judged by ACEEE on the state energy efficiency scorecard. The national organization ranks and awards states on their model efficiency programs, including how well they practice energy efficiency in state facilities, transportation, and procurement practices, or “leading by example” (LBE) as the category is labeled.

As cited earlier, ACEEE ranks Connecticut in the top three states for overall score, but puts the state in the middle of the rankings with a score of 1 out of a possible 3 in the “lead by example” category. In 2006, sixteen states achieved a higher ranking. Common deficiencies in state programs are:

- *Limited knowledge.* Information sharing and learning from the experiences of other states can help break the barrier of limited knowledge.
- *Insufficient funding.* Innovative financing mechanisms are already being used by many states to fund some of the LBE efficiency programs.
- *Limited support and staff availability.* Identifying a “champion” in each agency is important to ensure that LBE programs are implemented.

The ACEEE report suggests some key policies that can improve a state’s energy efficiency practices, and hence its overall program. Some of those are:

- using energy efficiency performance criteria, including EPA’s ENERGY STAR requirements;
- establishing new and existing building energy efficiency targets and savings goals;
- implementing procurement requirements, such as ENERGY STAR appliances, energy efficient equipment, and vehicles;
- identifying and using innovative financing mechanisms (e.g., energy savings performance contracts that require the savings cover the cost of improvements);
- adopting a tracking and reporting system for agency-by-agency data collection; and
- assigning an agency-level energy manager to be accountable for progress.

Connecticut’s Experience

Excerpts from *Energy Efficiency & Conservation Programs in Connecticut*, January 2009, Legislative Program Review and Investigations Committee, Connecticut General Assembly

In 2007, costs for energy in Connecticut state buildings were approximately \$123 million. While less than 1 percent of the state budget, nonetheless, it is a significant operating cost. However, the attention and priority given to energy efficiency and conservation programs is episodic and results are spotty, as the discussion below indicates. For the most part, state government’s energy costs are an operating expense paid for from the General Fund. Capital improvements to state buildings, including installation of energy efficiency measures, are mostly supported with state bond funds.

In the 2001 June Special Session, the legislature required that \$12 million be diverted from the Connecticut Conservation and Load Management Fund (now known as the Connecticut Energy Efficiency Fund) to a non-lapsing account for the Department of Public Works (DPW) for energy conservation programs in state facilities. DPW recently issued two reports on the status of those funds and the projects, which are summarized in the two tables below. Table V-2 summarizes the status of projects that are being funded without utility matching funds and Table V-3 summarizes the status of projects that will tap into the CEEF Small Business Energy Advantage Program.

Table V-2. Status Summary of Projects Using \$12 Million Diverted from CEEF to DPW: No Utility Matching Funds		
Project Status – 37 potential projects	DPW Funds	Agency Contributions
11 completed	\$3.5 million	\$700,000
18 underway; not yet complete	\$3.83 million	\$150,000
1 project complete	No DPW funding	\$310,710 (OPM)
1 project for solar PV	\$150,000	Applied to Clean Energy Fund (\$450,000)
5 projects cancelled (bidding and contract issues, too cost prohibitive, or not enough savings projected)	N/A	N/A
1 project “on hold” (bidding issues)	N/A	N/A
Total	\$7.3 million	
Source: PRI Staff Summary of DPW July 2008 status report		

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Table V-3. Status Summary of Projects Using \$12 Million Diverted from CEEF to DPW: With CEEF Funding		
Project Status – 23 potential projects	DPW Funds	CEEF Small Business Program Funds
3 completed/substantially completed	\$264,248	\$261,685
3 underway	\$135,199	\$124,196
5 about to start	\$214,104	\$227,796
6 on hold, pending CL&P funding (1 project does not have cost figures yet)	\$129,620 (5 projects)	\$93,185
6 on hold – DPW review or other reasons	\$489,996	\$302,243
Total	\$1,233,167	
Source: PRI Staff Summary of DPW July 2008 status report		

Since the \$12 million was dedicated seven years ago, the identification and completion of projects has been slow; only 35 projects have been completed or are underway, with about \$8.5 million spent or committed. One possible contributing factor is that responsibility for oversight and implementation of state facility energy management appears split between the Office of Policy and Management and the Department of Public Works. Further, there is only one and a half FTE staff at the Department of Public Works to oversee energy efficiency projects.

P.A. 03-132. Other attention has been given to energy management and efficiency in state buildings. In 2003, P.A. 03-132 was passed to implement the recommendations of the 2002 program review study on Energy Management by State Government. Three primary recommendations in that legislation were: 1) a mandate that the Office of Policy and Management require each state agency to identify methods available to reduce energy costs and the feasibility of implementing those methods; 2) that the Governor’s budget include a line-item breakdown of each agency’s energy expenditures; and 3) that OPM and DPW establish a pilot program that selects a state facility or complex to be covered by an energy performance contract with a private vendor.

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In response to the legislation, OPM did survey all state agencies and in February 2004 released a report entitled *Energy Management in State Facilities: A New Direction*. That report identified strategies for improvement including development of energy consumption monitoring data by building and by time of day, and linking that information to CoreCT (state government's automated business system for personnel, bill payment etc.) so that use data would automatically be reported at the time of bill payment.

However that linking has not yet been done, both because of system issues and because the biggest state government user of energy, higher education, is not on the CoreCT system. Thus, sound data on energy consumption in state facilities is difficult to obtain. Partially due to the lack of system capabilities, the budget reporting of energy expenses by agency has not been done.

The 2004 OPM report also identified the need for energy benchmarking in state buildings that compares their energy profile to similar buildings, to better target those state facilities most in need of energy improvements. In 2005, OPM issued a memorandum of agreement with the Institute for Sustainable Energy to conduct this benchmarking effort. To date, 110 buildings have been benchmarked, and some have been identified for energy efficiency projects as outlined in Table V-2 and V-3 above.

However, the second recommendation to pilot a private vendor energy performance contract was never implemented. Thus, no results can be analyzed to assess whether this might be an opportunity for state government to execute energy efficiency in a cost-effective way.

Governor Rell directive. In mid-December 2004, following significant increases in electric rates, Governor Rell directed the Department of Public Utility Control, the Office of Consumer Counsel, and the Energy Conservation Management Board to identify opportunities to reduce electric consumption at state facilities. The focus was to reduce the impact of increases in electric rates on the state budget.

The working group issued a report in February 2005, stating "there are considerable opportunities for savings that remain untapped." The report cited that a major gap was that the state had no comprehensive energy efficiency plan for its agencies. The report proposed 32 action steps that could be taken to reduce electricity consumption, many of which, according to the report authors, could be implemented quickly and would involve little or no upfront financial investment relative to the savings that could be achieved. The 32 proposals for change focused on the following:

- directing state agencies to contact electric utilities to ensure they are receiving the most beneficial rate or using the rate schedule that provides the lowest overall cost;
- creating a single point of contact for energy efficiency at all state agencies, staffed by personnel with expertise in energy efficiency;

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- assigning responsibility for energy efficiency to management at each state agency;
- instilling an energy efficiency ethic among state employees;
- developing statewide energy efficiency standards and practice for agencies;
- establishing state energy reduction goals, suggesting a 10 percent reduction in 2005 and an additional reduction of 5 percent in 2006;
- using incentives to sustain consumption reduction like embedding a portion of the savings in the agency budget;
- participating in load response programs; and
- establishing a state government energy plan, and preparing an energy efficiency scorecard for every state building and the equipment it contains.

However, the report did not clearly designate any agency or staff as being responsible for implementation. No status report on the results has ever been issued, and while it is clear that many of the steps have not yet been implemented, progress is being made in some areas. For example, state government:

- participates in load response programs;
- has recently begun using the electricity markets and its clout as a large purchaser to obtain favorable rates for state government's energy supply, realizing considerable financial savings; and
- issued an energy plan for state buildings in 2007.

Load response. P.A. 05-01, the Energy Independence Act, established several initiatives to reduce electric power supply costs caused by inadequate transmission and generation infrastructure in Connecticut, especially in the southwestern region of the state. Many of the financial incentives have supported installing onsite electric generation so that demand can be reduced off the New England electric grid during times of peak demand. Since 2005, 11 state agencies at 40 different sites have been participating in these load response programs, which generate about \$1.7 million in payments to state government from ISO-New England, the region's independent electric grid operator.

State energy plan. The state has also developed a state energy management plan for state facilities. The plan, which was also a requirement of P.A. 07-242, was developed by the Office of Policy and Management Energy Unit and issued in September 2007, modified in November

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2007. The plan provides anticipated savings and efficiencies that could be realized around certain proposals, including expansion of the load response program discussed above.

One of the tasks outlined in the plan is to develop a master contract with the utilities to govern state agency participation in ratepayer-supported CEEF and CCEF programs. In the early years of the Connecticut Energy Efficiency Fund, the state accessed the fund frequently. Between 2000 and 2004, 326 state projects received financial incentives from the Connecticut Energy Efficiency Fund totaling over \$7.8 million.

However, in the wake of ethics scandals, Governor Rell issued a series of Executive Orders during 2005 and 2006 requiring contracting reforms in state government. It was determined that the state access to the Connecticut Energy Efficiency Fund would be affected and that more formal contracting would be required. The provisions for the master contract have been developed over the past year and a request for proposals has been issued by the Department of Administrative Services. Responses were due on September 23, 2008.

During the time the contract was being developed, the state's participation in CEEF has fallen dramatically. United Illuminating indicates that only 32 state projects participated in its programs during 2005-2008 (to date), and received funding of about \$112,000, while CL&P stated that for the 2005-2007 calendar years, it funded 60 state projects for a total of about \$1.1 million.

Since the Clean Energy Fund is within a quasi-public state agency, the state would not have faced similar contracting issues with that fund, but only two state agencies have used or attempted to use it since its inception. DOT received \$140,000 for a solar system and DEP has applied to the fund for a \$450,000 solar system. Public Act 07-242 authorized \$30 million in bonds for the Clean Energy Fund to support the costs of renewable energy and combined heat and power projects in state buildings that could meet certain design ratings. However, the State Bond Commission has not issued any bonds for that purpose to date.

PERFORMANCE CONTRACTING
(from January 2009 Report, pp. 92-93)

Large and small companies have offered "whole building" approaches to energy savings for private businesses, government agencies, towns, schools, hospitals, and other large facilities for many years. The concept, also known as performance contracting or energy savings contracting, is relatively simple. The facility owner or government agency enters into a contract with an energy savings company (ESC) that identifies all the measures that need to be taken to conserve and reduce energy. The costs of measures are financed by the ESC and the company is paid from the energy savings produced over the life of the contract, typically 15 or 20 years.

In 2003, P.A. 03-132 enacted program review committee recommendations about energy management in state buildings, including the requirement that the Office of Policy and Management and the Department of Public Works establish a pilot program using performance contracting. The program was never implemented, so the benefits or drawbacks of this type of program are not based on any experience, but are theoretical only.

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While widely practiced by other state and local governments, the use of such contracts by public entities in Connecticut is not very common. The Town of East Hartford is in the initial stages of an energy performance contract and is experiencing positive results, according to town officials and staff knowledgeable about the contract. But representatives of the town and the energy savings company both indicated that there are few other towns engaging in performance contracting in Connecticut mostly because municipalities have little experience with it, and they fear the risk.

Many states have adopted model performance contracting language as part of their energy statutes. Massachusetts established performance contracting provisions in its 2008 comprehensive energy legislation known as the Green Communities Act that state agencies and local governments may use as guiding language. The Energy Services Coalition -- a national nonprofit organization with a board of directors that represents energy savings companies and suppliers as well as consumers like state energy offices and nonprofits -- also has developed model contract language, as well as guidelines for engaging in the entire process.

Two key questions need to be addressed before performance contracting is undertaken. First, would the measures to reduce energy be taken otherwise? Second, will the building outlive its usefulness and be vacated, or otherwise be substantially renovated, and therefore, nullify the savings? Also, if financing through normal government channels -- operating budget or bonding -- cannot be raised, then performance contracting is an alternative. The current economic downturn has resulted in even tighter access to capital for both private and public sectors, so all opportunities to finance projects that result in energy reduction and savings should be explored. The federal stimulus package may well target some funding toward making municipal buildings more efficient.

Lead By Example
(from January 2009 Report, pp. 93-95)

As discussed in Chapter V, Connecticut state government has not been ranked high for energy efficiency and conservation in its facilities. ACEEE ranked it about average (16 states ranked higher) and several studies and reports evaluating the state's performance have cited many deficiencies. Also, minimal progress has been made in implementing state facility projects that were to be financed with \$12 million diverted from the Connecticut Energy Efficiency Fund in 2001. But, probably the most basic weakness of state government's energy efficiency efforts is that *the state has never established an energy reduction goal as recommended in the governor's working group report of February 2005*. That group had recommended a 10 percent reduction in 2005 and a further decrease of 5 percent in 2006.

State government needs to make a commitment to reducing its energy use if it requires residents and businesses to do likewise. In this current fiscal climate, Connecticut consumers are making efforts to reduce their household costs, including using less energy and becoming energy efficient; there is an expectation that state government will also.

Finding areas that could save energy use in state facilities should not be difficult. At a recent "Green Energy Forum" held in the state's Legislative Office Building, one energy savings company expert invited to participate identified -- by impromptu observation -- several faulty

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practices and products in the one hearing room alone. The Office of Legislative Management has an energy conservation plan that lists more than 20 potential projects that could make the facility more efficient. Also, recently a number of legislators and legislative staff have formed an informal task force to identify ways, through employee surveys and other means, the Capitol complex could conserve energy use. Many of the responses suggest simple behavioral changes while other greater actions, like not running escalators all the time, have already been initiated.

Governor Rell has initiated the *One Thing* campaign, a statewide effort reminding residents and businesses of ways to practice energy conservation and efficiency. The governor also issued Executive Order 17 in February 2008 requiring that all future appliance purchases in executive branch agencies shall meet ENERGY STAR standards. While these endeavors are laudable, they do not go far enough. If state government is to “lead by example”, the legislature and the governor should require all state agencies to reduce their energy consumption by at least 10 percent by a certain date, as was recommended in the 2005 report to the governor.

Other measures that were also recommended then and have yet to be achieved should be implemented to ensure success. Some of those proposals would require the Office of Policy and Management to assist agencies in making modifications to reporting and budgeting practices. But if there is an urgency of purpose, those should not be obstacles. The governor should hold her agency heads responsible for achieving energy reductions, just as she would for achieving cost savings in the agency budget, but all branches of government need to elevate the importance of taking action. If all branches were to achieve a reduction of 10 percent in energy use that would translate to more than \$17 million in savings (based on 2005 costs).

Therefore, the program review committee recommends that:

The legislature and the governor establish a joint effort to require reduced energy use in state facilities by at least 10 percent by January 1, 2010. The joint effort should be through both executive order and legislative budgetary oversight. The legislature’s Appropriations Committee should require agencies to demonstrate energy cost reductions in their budgets.

The 2003 program review energy legislation (P.A. 03-132) resulting from the committee’s report on *Energy Management in State Buildings* required that the governor’s budget include a line-item breakdown of each agency’s energy budget, and that a pilot program for performance contracting be implemented within state government, but neither has been done. These requirements would help with oversight of energy reduction compliance, and may offer a cost-effective way of funding energy efficiency projects in state facilities.

Therefore, the program review committee recommends:

Both the statutory requirement that the Governor’s budget include a line-item breakdown of each agency’s energy expenditures and the requirement that the Office of Policy and Management implement a pilot program using performance contracting be fulfilled.